【CLAIMS】

【Claim 1】

An automatic level controlling apparatus for supporting an appliance, comprising:

a hollow leg body;

a piston inserted in the hollow leg body;

a spring seated on an upper portion of the piston;

a cap disposed on an upper portion of the piston to support an upper portion of the spring;

a frictional member disposed around the piston; and

a piston rod coupled to the piston and supported on a floor.

【Claim 2】

The automatic level controlling apparatus according to claim 1, wherein the frictional member is formed in a rim-shaped strip.

【Claim 3】

The automatic level controlling apparatus according to claim 1, wherein the lower portion of the leg body is supported on the appliance.

【Claim 4】

The automatic level controlling apparatus according to claim 1, wherein frictional member is formed of felt.

【Claim 5】

The automatic level controlling apparatus according to claim 1, wherein the piston rod is provided at an outer surface with a tightening portion supporting the appliance upward.

【Claim 6】

The automatic level controlling apparatus according to claim 1, wherein the cap is fixed on the leg body.

【Claim 7】

The automatic level controlling apparatus according to claim 1, wherein the piston rod and the piston are coupled to each other not to relatively rotate.

【Claim 8】

The automatic level controlling apparatus according to claim 1, wherein the piston and the leg body has a first operation mode where the piston and the leg body are capable of relatively rotating and a second operation mode where the piston and the leg body cannot relatively rotate.

【Claim 9】

The automatic level controlling apparatus according to claim 1, wherein the piston is provided at an outer surface with a seating groove in which the friction member is disposed.

【Claim 10】

The automatic level controlling apparatus according to claim 1, wherein a relative rotation locking unit is formed between the piston and the leg body.

【Claim 11】

The automatic level controlling apparatus according to claim 10, wherein the relative rotation locking unit includes a projection formed on one of the piston and leg body and a groove formed on the other of the piston and leg body.

【Claim 12】

The automatic level controlling apparatus according to claim 1, wherein the relative rotation locking unit is formed on a lower portion of the piston.

【Claim 13】

The automatic level controlling apparatus according to claim 1, wherein a space for receiving the spring is formed below the cap.

【Claim 14】

An automatic level controlling apparatus for supporting an appliance, comprising:

a hollow leg body;

at least one hook projection extending upward from a bottom of the leg body;

a cap disposed on an upper portion of the leg body;

a piston inserted in the hollow leg body;

at least one hook step extending upward from a bottom of the piston;

a spring seated on an upper portion of the piston; and

a piston rod coupled by penetrating a center of the piston and supported on a floor.

【Claim 15】

The automatic level controlling apparatus according to claim 14, wherein the hook step is formed in a radial direction from the center of the piston.

【Claim 16】

The automatic level controlling apparatus according to claim 14, wherein the piston includes hook steps and hook grooves formed between the hook steps and the hook projection is engaged with the hook groove.

【Claim 17】

An automatic level controlling apparatus for supporting an appliance, comprising:

a hollow leg body;

a cap disposed on an upper portion of the leg body;

a piston inserted in the leg body to be capable of vertically moving;

a piston rod coupled by penetrating a center of the piston and supported on a floor; and

a spring extending from an upper portion of the piston to a lower portion of the cap to provide force moving the lower portion of the piston to the lower portion of the leg body in a state where there is no outer force.

【Claim 18】

The automatic level controlling apparatus according to claim 17, further comprising a relative rotation locking unit to prevent the piston from relatively rotating on the leg body when the lower portion of the piston contacts the lower portion of the leg body.

【Claim 19】

The automatic level controlling apparatus according to claim 17, further comprising a frictional member disposed around the piston and contacting the leg body.